

NOTES

Faunal Speciation in New Georgia, Solomon Islands

Some 16 years ago the writer made certain contributions to the knowledge of the fauna of San Cristobal, the most eastern of the main Solomon Islands (Lever, *Limn. Soc. London, Proc.* 148(2): 82-83, 1936); this was followed by more general notes on the whole group (Lever, *Trop. Agr. [Trinidad]* 20(2): 40-42, 1943). The purpose of the present paper is to draw attention to an extensive local development of species formation in the New Georgia group of islands lying in the centre of the whole Solomon archipelago.

Besides the main island of New Georgia, which is some 50 miles in length, the group comprises seven closely associated islands including Kolombangara which, though only 15 miles in diameter, rises to a height of over 5,500 feet. All these islands, despite their nearness to one another, are separated by very much deeper water than any other comparable group in Melanesia (Fig. 1). Thus, although Kolombangara is only 10 miles from Gizo, the intervening sea is 245 fathoms deep, and soundings between Rendova and Wana Wana, which are only 12 miles apart, reached 552 fathoms.

Recognition of an inter-insular variation in the animals of these islands was first noted in the birds by Mayr (*Amer. Mus. Novitates* 522: 1-22, 1932), who showed that while the thick-head *Pachycephala pectoralis* is represented by a different species in each of the larger Solomon Islands, in New Georgia alone are several species found. Later he showed that specimens of the white eye, *Zosterops rendovae*, from Vella Lavella and Bagga were distinct from those occurring in Ganongga and Gizo to the south and Kolombangara to the south-east (*Amer. Nat.* 74: 249-278, 1940). In fact the flying time of 3.4 minutes which these

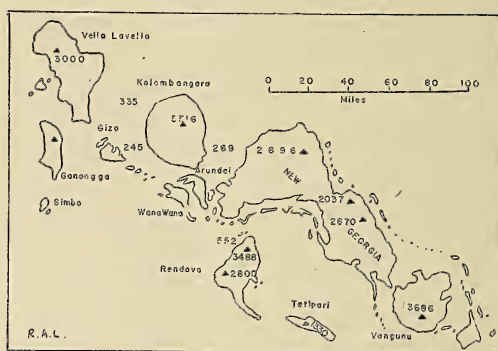


FIG. 1. Map of the New Georgia Group, Solomon Islands. The outlines of this map have been taken largely from United States Army maps, as the most recent official British map (No. 17/30 of Directorate of Colonial Surveys) shows Arundel Island as a portion of New Georgia although in fact a deep-water channel occurs between the former and the intervening Woodford Island, with a constriction at the Diamond Narrows. The D.C.G. map marks, but leaves unnamed, the large island of Vella Lavella; the spot levels have, however, been followed here. The most recent edition (1945) of the British Admiralty chart No. 2392 indicates only tentative outlines for the coast of western Vella Lavella and adds that Ganongga may be 2 to 4 miles further west than its marked position. (Altitude in feet, sea depth in fathoms.)

small birds take to fly 1.7 kilometers would have enabled them to bridge the gap which however, is sufficient to allow of subspecies occurring on the different islands.

That this same phenomenon occurs in insects has not heretofore been appreciated. However, well-marked subspecies of the weevil *Exophthalmida coerulescens* Gunther, taken by the writer in 1936, were shown to exist by Marshall (*Roy. Ent. Soc. London, Proc., Ser. B.* 10(4): 51-55, 1941). The typical form, from Vella Lavella, is opalescent grey with many black spots whereas *E. c. ganonggae* is metallic green, and *E. c. kolombangarae* is fawn with small dark spots. A further point of interest

is that, although much more intensive collecting has been done on the more easterly islands of Guadalcanal, Isabel, San Cristobal, and Malaita, this conspicuous metallic weevil was never taken on any of them.

This local endemism, which is probably of relatively recent origin, is not comparable with the inter-insular variation recorded by Marshall (*Roy. Ent. Soc. London, Trans.* 87(3): 69-101, 1938) for another genus of weevils (*Elytrurus*) from Fiji and the New Hebrides or various other insects found in the Marquesas (Mumford and Adamson, *V^e Congr. Internat. Ent., Paris*: 431-450, 1933), as in these cases the islands are separated by varying but extensive distances of open sea.

Among the Lepidoptera one extreme case of aberration of a bird-winged butterfly can be cited, viz., *Tröides (Ornithoptera) victoriae rubianus* Roths. Among a series from Ganongga [published as Ranonga], one male had an unusually large green area on the forewing, other males showing a less extensive development (Dicksee, *Roy. Ent. Soc. London, Proc.* 8: 144, 1934). As was remarked when these specimens were exhibited at a meeting of the Royal Entomological Society, it is strange that this Ganongga race should be so very variable as specimens from other islands nearby seemed to be constant in wing pattern. [The distribution of this butterfly is given in

Seitz (*Macrolepidoptera of the World*, vol. 9: 12, 1927) as being Kolombangara Island and Rubiana, the latter (also spelled Roviana) being used both for a village on the west of New Georgia and an island lying to the south of the main island.]

Although the bulk of the writer's collections of anisopterous Odonata were wide-ranging forms, a handsome new species taken in 1936, *Agriocnemis salamonis* Liefstinck (*Treubia* 20(2): 319-374, 1949), has recently been described from Ganongga, and it seems likely that adjacent islands will yield more new material from this neglected order.

As few classes of animals have been intensively collected in this area, it is probable that many interesting varieties remain to be discovered although probably not in the Amphibia and Reptilia. These were thoroughly collected and reported on by the Burts (*Amer. Mus. Nat. Hist., Bul.* 63(5): 462-597). Only one snake (*Denisonia woodfordii* (Boul.)) is confined to New Georgia, and it shows no inter-insular variation.

As the writer is no longer stationed in Melanesia, he has thought it desirable to present these few observations and thus draw attention to the intensive endemism to be found in this relatively small but very interesting area.—R. J. A. W. Lever, *Department of Agriculture, Kuala Lumpur, Malaya.*

News Notes

Several meetings of general importance were held in Honolulu during the week of February 16-21.

The American Institute of Biological Sciences' Advisory Panel on Biology to the Office of Naval Research held its spring meeting at the University of Hawaii February 18 and 19. In conjunction with this meeting the Hydrobiology Committee of the A.I.B.S. met at the University on February 20.

The annual meeting of the Invertebrate Consultants Committee for the Pacific, of the Pacific Science Board of the National Research

Council, was held at the Experiment Station of the Sugar Planters' Experiment Station, February 18 and 19. L. J. Dumbleton, Plant and Animal Quarantine Officer of the South Pacific Commission, stationed in Noumea, was an observer at the meeting.

Book Notice

EKMAN, SVEN. 1953. *Zoogeography of the Sea*. xiv+417 pp., 121 figs. Sidgwick and Jackson Limited, London. Distributed in the United States by The Macmillan Company, New York. \$6.50. A revised English edition of a work originally published in German in 1935.